

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously Presented) A bulk material baler comprising:
a frame with a plurality of head walls;
a plurality of bale strap guide tracks deployed on said frame, each spaced substantially about 9 and ¼ inches from adjacent bale strap guide tracks;
a plurality of bale strap drivers, each fixedly attached to one of the plurality of head walls and each driver being driven by an electro-servo motor, and each driver being operatively aligned with one of the bale strap guide tracks, each of said bale strap drivers driving a strap via at least one pair of strap drive wheels by frictional contact with the strap, each pair of strap drive wheels being located in a plane perpendicular to the plane of said bale strap guide tracks, wherein said wheels of the plurality of bale strap drivers drive strap through at least two adjacent strap guide tracks simultaneously; and
a plurality of bale strap fasteners, each fixedly attached to one of said head walls and each operatively aligned with one of the bale strap guide tracks.
2. (Previously Presented) The apparatus of Claim 1 wherein the bale strap guide tracks, strap drivers and fasteners are each six in number.

3. (Previously Presented) A bulk material baler comprising:

a baler base;

a plurality of head walls supported by a translating carriage slideably attached to said base;

a plurality of bale strap guide tracks supported by said head walls and configured to space a plurality bale strap loops substantially about 9 and ¼ inches from adjacent bale strap loops;

a plurality of bale strap drivers supported by said head walls, each operatively aligned with one of said bale strap guide tracks, each of said bale strap drivers driving a strap via at least one pair of strap drive wheels by frictional contact with said strap, each pair of strap drive wheels being in a plane perpendicular to the plane of said bale strap loop and being propelled by a separate electro-servo motor, wherein the plurality of bale strap drivers drive strap through at least two adjacent strap guide tracks simultaneously; and

a plurality of bale strap fasteners supported by said head walls and each operatively aligned with one of said bale strap guide tracks.

4. (Previously Presented) The apparatus at Claim 3 wherein each of said bale strap fasteners is propelled by an electro-servo motor.

5. (Canceled).

6. (Previously Presented) The apparatus of Claim 3 wherein said head walls are six in number, each of said heads supporting one bale strap guide track, one bale strap driver and one strap fastener.

7. (Original) The apparatus of Claim 6 wherein each of said strap fasteners is propelled by an electro-servo motor.

8. (Canceled).

9. (Original) The apparatus of Claim 3 wherein said carriage assembly has three support heads, each of said heads supporting one bale strap guide track, one bale strap driver and one strap fastener.

10. (Canceled).

11. (Canceled).

12. (Canceled).

13. (Canceled).

14. (Canceled).

15. (Canceled).

16. (Previously Presented) A bulk material baling apparatus comprising:

a bale forming and binding station; and

a bale binding device, said binding device employing strap for binding a bale of bulk material contained within said binding station, said binding device having a support bracket housing a plurality of electro-servo strap propulsion units, a plurality of articulated guide tracks and a plurality of fasteners;

wherein said binding device receiving strap wire through the plurality of strap propulsion units, each of said propulsion units impelling strap via at least one pair of strap drive wheels by frictional contact with the strap, said at least one drive wheel pair being in a plane perpendicular to the plane of said guide tracks, said at least one drive wheel pair being propelled by an electro-servo motor, with said binding device driving strap through a plurality of adjacent articulated guide tracks simultaneously, said articulated guide tracks directing the strap in a trajectory surrounding the bale, said fastener, upon a length of the strap completing a circuit of the surrounding trajectory, fastening the complete circuit length of the strap into a closed loop about the bale; and

said support bracket being configured to space each closed loop of bale strap substantially about 9 ¼ inches apart from adjacent closed loop of bale strap.

17. (Original) The apparatus of Claim 16 wherein the bale strap guide tracks, strap propulsion units, propulsion electro-servo motors, fasteners and support brackets are each six in number.
18. (Canceled).
19. (Canceled).
20. (Previously Presented) The apparatus of Claim 16 wherein a drive shaft of said electric servo motor is parallel to the plane of the bale strap loop.
21. (Previously Presented) The apparatus of Claim 17 wherein drive shafts of all six of said propulsion units are parallel to the plane of said bale strap loops.
22. (Original) The apparatus of Claim 16 wherein the drive shaft of said electric servo motor is perpendicular to the plane of the said at least one pair of drive wheels.
23. (Canceled).
24. (Canceled).

25. (Currently Amended) A device comprising:

a plurality of strap guide tracks located in substantially parallel planes for directing strapping into a loop;

a plurality of strap drivers, each with an electro-servo motor driving at least one pair of wheels for driving strapping by frictional contact; and

a plurality of strap fasteners for fastening strapping into a closed loop;

wherein:

the at least one pair of wheels of each driver are located in a plane perpendicular to the plane of the strap guide tracks;

each driver has a corresponding fastener and a corresponding one of the plurality of strap guide tracks operatively connected ~~[(; and)]~~ so that each driver is operatively aligned to feed strapping through ~~one of the plurality of the corresponding guide~~ ~~[(tracks)]~~ track and into the corresponding fastener.

26. (Previously Presented) The device of claim 25, wherein the plurality of drivers drive strapping through two or more of the plurality of guide tracks simultaneously.

27. (Previously Presented) The device of claim 26, wherein the guide tracks are spaced substantially about 9 and ¼ inches apart.

28. (Previously Presented) The device of claim 27, wherein the strap guide tracks, strap drivers, and strap fasteners each are six in number.

29. (Previously Presented) The device of claim 27, further comprising a carriage, wherein the plurality of drivers and the plurality of fasteners are affixed to the carriage and the carriage is operable to translate the plurality of drivers and the plurality of fasteners in a direction perpendicular to the plane of the guide tracks.

30. (Previously Presented) The device of claim 27, wherein each guide track has one corresponding driver and one corresponding fastener.

31. (Currently Amended) A device comprising:

a plurality of strap guide tracks for directing strapping into a loop;

a plurality of narrow head strap drivers each operatively aligned to drive strapping into ~~the~~ a corresponding one of the plurality of strap guide tracks; and

a plurality of strap fasteners, each corresponding to one of the plurality of narrow head strap drivers;

wherein;

each strap driver is operatively connected to the corresponding strap guide track and the corresponding strap fastener, such that each driver is operatively aligned to feed strapping through the corresponding guide track and into the corresponding fastener; and

the plurality of strap drivers are operable to drive strapping simultaneously through multiple strap guide tracks.

32. (Previously Presented) The device of claim 31, wherein each narrow head strap driver comprises:

an electro-servo motor; and

a plurality of strap drive wheels driven by the motor and located in a plane perpendicular to the plane of the guide tracks.

33. (Previously Presented) The device of claim 31, further comprising a carriage, wherein the carriage is operable to translate the plurality of narrow head strap drivers and the plurality of strap fasteners in a plane perpendicular to the plane of the plurality of strap guide tracks.

34. (Previously Presented) The device of claim 31, wherein each narrow head strap driver occupies no more than about 9 ¼ inches width.

35. (Previously Presented) The device of claim 31, wherein each narrow head strap driver drives strapping through one of the plurality of strap guide tracks and into the corresponding strap fastener, which fastens the strapping to form a closed loop.

36. (Previously Presented) The device of claim 31, wherein the strap guide tracks are spaced substantially about 9 ¼ inches apart.